

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Ekwuribe et al.

Filed: concurrently herewith

Serial No.: to be assigned

For: *Amphiphilic Drug-Oligomer Conjugates with Hydrolyzable Lipophile Components and Methods for Making and Using the Same*

Date: February 9, 2004

Mail Stop PATENT APPLICATION

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

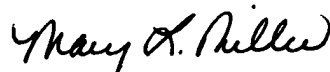
INFORMATION DISCLOSURE STATEMENT CITATION UNDER 37 C.F.R. § 1.97

Sir:

Attached are eleven sheets of form PTO-1449 as submitted in parent application Serial No. 10/018,879, filed August 5, 2002, with the parent application number, Attorney Docket number and filing date crossed out and the current Attorney Docket number written in. Because these references have already been made of record in the parent application, a copy of each of these references is not provided herein. However, applicants will provide a copy of any such reference cited herein upon request from the Examiner. Applicants respectfully request that these documents be considered by the Examiner and officially made of record in accordance with the provisions of 37 C.F.R. §1.97 and Section 609 of the MPEP.

No fee is believed due. However, the Commissioner is hereby authorized to charge any deficiency or credit any refund to Deposit Account No. 50-0220.

Respectfully submitted,



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I hereby certify that this correspondence is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to: Mail Stop PATENT APPLICATION, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.


Cathy A. Schetzina

Substitute form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)				<i>Complete if Known</i>				
				Application Number				
				Filing Date				
				First Named Inventor				
				Group Art Unit				
				Examiner Name				
Sheet 1 Of 1				Attorney Docket Number				
U.S. PATENT DOCUMENTS								
Examiner Initials*	Cite No.	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear		
		Number	Kind Code (if known)					
	1.	4,223,163		Guillot	09/16/1980			
	2.	4,801,575		Pardridge	01/31/1989			
	3.	5,099,074		Mueller et al.	03/24/1992			
	4.	5,122,614		Zalipsky	06/16/1992			
	5.	5,298,410		Phillips et al.	03/29/1994			
	6.	5,320,840		Camble et al.	06/14/1994			
	7.	5,428,128		Mensi-Fattohi et al.	06/27/1995			
	8.	5,643,575		Martinez et al.	07/01/1997			
	9.	5,714,639		Bowman et al.	02/03/1998			
	10.	6,011,008		Domb et al.	01/04/2000			
FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No.	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
		Office	Number	Kind Code (if known)				
	11.	JP	01207320		Daicel Chem Ind. Ltd.	08/21/1989		
	12.	JP	01254699		Kodama Co., Ltd.	10/11/1989		
	13.	PCT	WO 97/14740		Receptagen Corporation, University of Washington	04/24/1997		
	14.	EP	0 822 218 A2		Glenn A. Miller, Michael W. Jorgenson, Richard Budnik	02/04/1998		
	15.	DE	196 32 440 A1		BASF AG	02/19/1998		
	16.	PCT	WO 01/12230		Myung-Ok Park, Kang Choon Lee	02/22/2001		
OTHER NON PATENT LITERATURE DOCUMENTS								
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published						T
	17.	Hashimoto et al., "Synthesis of Palmitoyl Derivatives of Insulin and Their Biological Activities," <i>Pharmaceutical Research</i> , 6:2 171-176 (1989)						
	18.	Krishnan, B. Radha, et al., "Stability and Physical Characteristics of Orally Active Amphiphilic Human Insulin Analog, Methoxy (Polyethylene Glycol) Hexanoyl Human Recombinant Insulin (HIM2)," <i>Proceed. Int'l. Symp. Control. Rel. Bioact. Mater.</i> , 27 pp. 1038-39 (2000)						
	19.	Xia, Jiding, et al., "Effects of polyoxyethylene chain length distribution on the interfacial properties of polyethylene glycol n-dodecyl ether," <i>Yingyong Huaxue</i> , 2:4, pp. 59-65 (1985) (Abstract Only)						

Examiner Signature	Date Considered
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

FORM PTO-1449 U.S. Department of Commerce Patent and Trademark Office				Attorney Docket Number 9233-74CT		Serial No. 10/018,879 <i>T be assigned</i>	
LIST OF DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary)				Applicants: Ekwuribe et al.			
				Filing Date: August 5, 2002 <i>Concurrently herewith</i>		Group	
U. S. PATENT DOCUMENTS							
Examiner Initial	1.	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
	1.	3,919,411	11/11/75	Glass et al.			
	2.	3,950,517	04/13/76	Lindsay et al.			
	3.	4,253,998	03/03/81	Sarantakis			
	4.	4,277,394	07/07/81	Fujino et al.			
	5.	4,338,306	07/06/82	Kitao et al.			
	6.	4,348,387	09/07/82	Brownlee et al.			
	7.	4,469,681	09/04/84	Brownlee et al.			
	8.	4,472,382	09/18/84	Labrie et al.			
	9.	4,554,101	11/19/85	Hopp			
	10.	4,579,730	04/01/86	Kidron et al.			
	11.	4,839,341	06/13/89	Massey et al.			
	12.	4,917,888	04/17/90	Katre et al.			
	13.	4,957,910	09/18/90	Sutton et al.			
	14.	4,994,439	02/19/91	Longenecker et al.			
	15.	5,089,261	02/18/92	Nitecki et al.			
	16.	5,157,021	10/20/92	Balschmidt et al.			
	17.	5,162,430	11/10/92	Rhee et al.			
	18.	5,202,415	04/13/93	Jonassen et al.			
	19.	5,206,219	04/27/93	Desai			
	20.	5,283,236	02/01/94	Chiou			
	21.	5,286,637	02/15/94	Veronese et al.			
	22.	5,292,802	03/08/94	Rhee et al.			
	23.	5,304,473	04/19/94	Belagaje et al.			
	24.	5,308,889	05/03/94	Rhee et al.			
	25.	5,312,808	05/17/94	Shorr et al.			

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				Applicants: Ekwuribe et al.			
				Filing Date: August 5, 2002 <i>Concurrently herewith</i>		Group	
	26.	5,324,775	06/28/94	Rhee et al.			
	27.	5,328,955	07/12/94	Rhee et al.			
	28.	5,405,621	04/11/95	Sipos			
	29.	5,405,877	04/11/95	Greenwald et al			
	30.	5,413,791	05/09/95	Rhee et al.			
	31.	5,415,872	05/16/95	Sipos			
	32.	5,444,041	08/22/95	Owen et al.			
	33.	5,446,091	08/29/95	Rhee et al.			
	34.	5,457,066	10/10/95	Frank et al.			
	35.	5,461,031	10/24/95	De Felippis			
	36.	5,468,478	11/21/95	Saifer et al.			
	37.	5,504,188	04/02/96	Baker et al.			
	38.	5,506,203	04/09/96	Backstrom et al.			
	39.	5,518,998	05/21/96	Backstrom et al.			
	40.	5,523,348	06/04/96	Rhee et al.			
	41.	5,529,915	06/25/96	Phillips et al.			
	42.	5,550,188	08/27/96	Rhee et al.			
	43.	5,567,422	10/22/96	Greenwald			
	44.	5,612,460	03/18/97	Zalipsky			
	45.	5,631,347	05/20/97	Baker et al.			
	46.	5,637,749	06/10/97	Greenwald			
	47.	5,646,242	07/08/97	Baker et al.			
	48.	5,650,388	07/22/97	Shorr et al.			
	49.	5,658,878	08/19/97	Backstrom et al.			
	50.	5,700,904	12/23/97	Baker et al.			
	51.	5,707,648	01/13/98	Yiv			
	52.	5,738,846	04/14/98	Greenwald et al.			
	53.	5,747,445	05/05/98	Backstrom et al.			
	54.	5,747,642	05/05/98	De Felippis			

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	55.	5,750,497	05/12/98	Havelund et al.			
	56.	5,766,620	06/16/98	Heiber et al.			
	57.	5,830,853	11/03/98	Backstrom et al.			
	58.	5,849,860	12/15/98	Hakimi et al.			
	59.	5,853,748	12/29/98	New			
	60.	5,854,208	12/29/98	Jones et al.			
	61.	5,856,451	01/05/99	Olsen et al.			
	62.	5,866,538	02/02/99	Norup et al.			
	63.	5,874,111	02/23/99	Maitra et al.			
	64.	5,898,028	04/27/99	Jensen et al.			
	65.	5,902,588	05/11/99	Greenwald et al.			
	66.	5,905,140	05/18/99	Hansen			
	67.	5,922,675	07/13/99	Baker et al.			
	68.	5,942,248	08/24/99	Barnwell			
	69.	5,948,751	09/07/99	Kimer et al.			
	70.	5,952,008	09/14/99	Backstrom et al.			
	71.	5,952,297	09/14/99	De Felippis et al.			
	72.	5,962,267	10/05/99	Shin et al.			
	73.	5,968,549	10/19/99	New et al.			
	74.	5,969,040	10/19/99	Hallahan et al.			
	75.	5,981,709	11/09/99	Greenwald et al.			
	76.	5,985,263	11/16/99	Lee et al.			
	77.	6,004,574	12/21/99	Backstrom et al.			
	78.	6,025,325	02/15/00	Campfield et al.			
	79.	6,034,054	03/07/00	De Felippis et al.			
	80.	6,043,214	03/28/00	Jensen et al.			
	81.	6,051,551	04/18/00	Hughes et al.			
	82.	6,063,761	05/16/00	Jones et al.			
	83.	6,093,391	07/25/00	Kabanov et al.			

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					Applicants:			
					Ekwuribe et al.			
					Filing Date: August 5, 2002 Concurrently herewith		Group	
	84.	6,113,906	09/05/00	Greenwald et al.				
	85.	6,165,976	12/26/00	Backstrom et al.				
	86.	6,177,087	01/23/01	Greenwald et al.				
	87.	6,191,105	02/20/01	Ekwuribe et al.				
	88.	6,200,602	03/13/01	Watts et al.				
	89.	6,211,144	04/03/01	Havelund				
	90.	6,248,363	06/19/01	Patel et al.				
	91.	6,251,856	06/26/01	Markussen et al.				
	92.	6,258,377	07/10/01	New et al.				
	93.	6,268,335	07/31/01	Brader				
	94.	6,306,440	10/23/01	Backstrom et al.				
	95.	6,310,038	10/30/01	Havelund				
	96.	6,323,311	11/27/01	Liu et al.				
	97.	6,335,316	01/01/02	Hughes et al.				
FOREIGN PATENT DOCUMENTS								
		Document Number	Date	Country	Class	Subclass	Translation Yes No	
	98.	GB 1 492 997	11/23/77	Great Britain				
	99.	JP 1 254 699	10/11/89	Japan			No	
	100.	WO 93/01802	02/04/93	PCT			Yes - abstract	
	101.	EP 0 483 465	08/02/95	EPO			Yes - claims	
	102.	EP 0 597 007	10/16/96	EPO				
	103.	EP 0 621 777	11/09/96	EPO			Yes - claims	
	104.	EP 0 797 615	01/13/99	EPO				
	105.	WO 99/32134	07/01/99	PCT				
OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)								
	106.	Abuchowski, A. and F. F. Davis, "Soluble Polymer-Enzyme Adducts," pp. 368-383, Enzymes as Drugs, J. S. Holcenberg, John Wiley, 1981.						
	107.	Akiyama, M. et al., "The Synthesis of New Derivatives of 1-.beta.-D-Arabinofuranosylcytosine," Chem. Pharm. Bull., 1978, 26(3): p. 981-984.						
	108.	Allcock et al., "Contemporary Polymer Chemistry," 394-403 (2nd. ed., 1991).						

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		Applicants: Ekwuribe et al.	
		Filing Date: August 5, 2002 Concurrently herewith	Group
	109.	Ansell, S. et al., "Application of Oligo-(14-amino-3,6,9,12-tetraoxatetradecanoic acid) Lipid Conjugates as Steric Barrier Molecules in Liposomal Formulations," <i>Bioconjugate Chem.</i> , 10: 653-666 (1999).	
	110.	Banting et al., "Pancreatic Extracts in the Treatment of Diabetes Mellitus: Preliminary Report," <i>Can. Med. Assoc. J.</i> , 145(10): 1281-1286 (1991).	
	111.	Baudys et al., "Stabilization and Intestinal Absorption of Human Calcitonin," <i>J. Contr. Rel.</i> vol. 39, pp. 145-51.	
	112.	Baudys, M. et al., "Synthesis and Characterization of Different Glycosylated Derivatives of Insulin" <i>Proceed. Intern. Symp. Cont. Rel. Bioactive. Mater.</i> , 1992, 19: 210-211.	
	113.	Brange, J., "Galenics of Insulin: The Physico-Chemical and Pharmaceutical Aspects of Insulin and Insulin Preparations," <i>Novo Research Institute, Denmark</i> , 18-100 (1987).	
	114.	Chen et al., "Synthesis and Properties of AMA Amphiphiles," <i>J. Org. Chem.</i> , 64: 6870-6873 (1999).	
	115.	Chien, Y. W., <i>Novel Drug Delivery Systems</i> , pp. 678-679, Marcell Deffer, Inc., New York, N.Y., 1992.	
	116.	Coombes, A.G.A. et al., "Biodegradable Polymeric Microparticles for Drug Delivery and Vaccine Formulation: the Surface Attachment of Hydrophilic Species Using the Concept of Poly(Ethylene Glycol) Anchoring Segments," <i>Biomaterials</i> , 18: 1153-1161 (1997).	
	117.	Coudert et al., "A Novel, Unequivocal Synthesis of Polyethylene Glycols," <i>Synthetic Communications</i> , 16(1): 19-26 (1986).	
	118.	Forst et al., "New Aspects on Biological Activity of C-peptide in IDDM Patients," <i>Exp. Clin. Endocrinol. Diabetes</i> , 106: 270-276 (1998).	
	119.	Francis et al., "Polyethylene Glycol Modification: Relevance of Improved Methodology to Tumour Targeting," <i>J. Drug Targeting</i> , 3: 321-340 (1996).	
	120.	Gombotz et al., "Biodegradable Polymers for Protein and Peptide Drug Delivery," <i>Bioconjugate Chem.</i> , 6: 332-351 (1995).	
	121.	A. Guzman & R. Garcia, "Effects of Fatty Ethers and Stearic Acid on the Gastrointestinal Absorption of Insulin," <i>PRHSJ</i> , 9(2): 155-159 (1990).	
	122.	Harris, J. Milton, "Laboratory Synthesis of Polyethylene Glycol Derivatives," <i>J. Macromol. Science - Rev. Macromol. Chem. Phys.</i> , C25(3): 325-373 (1985).	
	123.	Hashimoto et al., "Synthesis of Palmitoyl Derivatives of Insulin and Their Biological Activities," <i>Pharmaceutical Research</i> , 6(2): 171-176 (1989).	
	124.	Igarashi, R. et al., "Biologically Active Peptides Conjugated with Lecithin for DDS" <i>Proceed. Intern. Symp. Cont. Rel. Bioactiv. Mater.</i> 1990, 17 367-368.	
	125.	Kemmler et al., "On the Nature and Subcellular Localization of the Proinsulin Converting Enzymes," <i>Federation Proceedings</i> , 30(Abtract 924): 1210Abs (1971).	
	126.	Kemmler et al., "Studies on the Conversion of Proinsulin to Insulin: I. Conversion in Vitro with Trypsin and Carboxypeptidase B," <i>The Journal of Biological Chemistry</i> , 246(22) 6786-6791 (November 25, 1971).	
	127.	D.G. Lindsay & S. Shall, "The Acetylation of Insulin," <i>Biochem. J.</i> , 121: 737-745 (1971).	
	128.	Mesiha et al., "Hypoglycaemic effect of oral insulin preparations containing Brij 35, 52, 58 or 92 and stearic acid," <i>J. Pharm. Pharmacol.</i> , 33: 733-734 (1981).	
	129.	Neubauer et al., "Influence of Polyethylene Glycol Insulin on Lipid Tissues of Experimental Animals," <i>Diabetes</i> , 32: 953-958 (Oct. 1983).	
	130.	Nucci, et al. "The Therapeutic Value of Poly(ethylen Glycol)-Modified Proteins" <i>Ac. Drug. Del. Rev.</i> 6: 133-151 1991.	
	131.	Patel et al. "Oral Administration of Insulin By Encapsulation Within Liposomes" <i>FEBS Lett.</i> 62(1) 60-63 1976.	

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		Applicants: Ekwuribe et al.	
		Filing Date: August 5, 2002 Concurrently herewith	Group
	132.	Russell-Jones, G. J. "Vitamin B12 Drug Delivery", Proceed. Intern. Symp. Control. Rel. Bioactive. Mater., 1992, 19: 102-103.	
	133.	Santiago, N. et al, "Oral Immunization of Rats with Influenza Virus M Protein (M1) Microspheres," Proceed. Intern. Symp. Cont. Rel. Bioactive. Mater., 1992, 19: 116-117.	
	134.	Savva et al., "Effect of PEG Homopolymer and Grafted Amphiphilic PEG-Palmityl on the Thermotropic Phase Behavior of 1,2-Dipalmitoyl-SN-Glycero-3-Phosphocholine Bilayer," Journal of Liposome Research, 9(3): 357-365 (1999).	
	135.	Shen et al., "(C) Means to Enhance Penetration, (3) Enhancement of polypeptide and protein absorption by macromolecular carriers via endocytosis and transcytosis," Advanced Drug Delivery Reviews, 8: 93-113 (1992).	
	136.	G. Sirokman & G.D. Fasman, "Refolding and proton pumping activity of a polyethylene glycol-bacteriorhodopsin water-soluble conjugate," Protein Science, 2: 1161-1170 (1993).	
	137.	Szeleifer, I. et al., "Spontaneous Liposome Formation Induced by Grafted Poly(Ethylene Oxide) Layers: Theoretical Prediction and Experimental Verification," Proceedings of the National Academy of Sciences of the United States of America, 95(3): 1032-1037 (Feb. 3, 1998).	
	138.	Taniguchi, T. et al, "Synthesis of Acyloyl Lysozyme and Improvement of its Lymphatic Transport Following Small Intestinal Administration in Rats" Proceed. Intern. Symp. Control. Rel. Bioactiv. Mater., 1992, 19: 104-105.	
	139.	V.P. Torchilin, "Immunoliposomes and PEGylated Immunoliposomes: Possible Use for Targeted Delivery of Imaging Agents," Immunomethods, 4: 244-258 (1994).	
	140.	Tyle, Praveen, " Ionophoretic Devices for Drug Delivery," Pharma Research, 3:6 318-326 (1986).	
	141.	Wahren et al., "Role of C-peptide in Human Physiology," Am. J. Physiol. Endocrinol. Metab., 278: E759-E768 (2000).	
	142.	J. Wei & G.D. Fasman, "A Poly(ethylene glycol) Water-soluble Conjugate of Porin: Refolding to the Native State," Biochemistry, 34:6408-6415 (1995).	
	143.	Zalipsky et al., "Peptide Attachment to Extremities of Liposomal Surface Grafted PEG Chains: Preparation of the Long-Circulating Form of Laminin Pentapeptide, YIGSR," Bioconjugate Chem. 6: 705-708 (1995).	

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U. S. PATENT DOCUMENTS							
Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate
	1.	3,256,153	6/1966	Heimlich	167	82	
	2.	3,868,356	2/1975	Smyth	260	112.7	
	3.	4,003,792	1/1977	Mill et al.	195	63	
	4.	4,044,196	8/1977	Hüper et al.	526	271	
	5.	4,087,390	5/1978	Shields	260	8	
	6.	4,093,574	6/1978	Shields	260	8	
	7.	4,100,117	7/1978	Shields	260	8	
	8.	4,179,337	12/1979	Davis et al.	435	181	
	9.	4,229,438	10/1980	Fujino et al.	424	177	
	10.	4,253,998	3/1981	Sarantakis	260	8	
	11.	4,277,394	7/1981	Fujino et al.	260	112.5R	
	12.	4,410,547	10/1983	Ueno et al.	424	317	
	13.	4,585,754	4/1986	Meisner et al.	514	8	
	14.	4,622,392	11/1986	Hong et al.	536	29	
	15.	4,684,524	8/1987	Eckenhoff et al.	424	469	
	16.	4,698,264	10/1987	Steinke	428	402.2	
	17.	4,717,566	1/1988	Eckenhoff et al.	424	438	
	18.	4,744,976	5/1988	Snipes et al.	424	408	
	19.	4,772,471	9/1988	Vanlerberghe et al.	424	450	
	20.	4,797,288	1/1989	Sharma et al.	424	476	
	21.	4,840,799	6/1989	Appelgren et al.	424	493	
	22.	4,849,405	7/1989	Ecanow	514	3	
	23.	4,935,246	6/1990	Ahrens	424	490	
	24.	4,946,828	8/1990	Markussen	514	3	
	25.	4,963,367	10/1990	Ecanow	424	485	
	26.	5,013,556	5/1991	Woodle et al.	424	450	

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FORM PTO-1449 U.S. Department of Commerce Patent and Trademark Office LIST OF DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary)					Attorney Docket Number 9233-74 (C)		Serial No. 10/018,879 To be assigned	
					Applicants: Ekwuribe et al.			
					International Filing Date: June 19, 2000		Group	

	27.	5,055,300	10/1991	Gupta	424	409	
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	29.	5,093,198	3/1992	Speaker et al.	428	402.21	
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	33.	5,545,618	8/1996	Buckley et al.	514	12	
	34.	5,606,038	2/1997	Regen	536	6.5	
	35.	5,681,567	10/1997	Martinez et al.	424	178.1	
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	43.	6,309,633	10/2001	Ekwuribe et al.	424	85.1	

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	45.	WO 95/09831	4/1995	PCT	C07C	203/04	Yes
	46.	WO 95/30641	11/1995	PCT	C07C	203/04	Yes
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	50.	Banting et al.; "Pancreatic Extracts in the Treatment of Diabetes Mellitus" <i>The Canadian Medical Association Journal</i> 12 141-146 (1992).
	51.	Boccu et al.; "Pharmacokinetic Properties of Polyethylene Glycol Derivatized Superoxide Dismutase" <i>Pharmacological Research Communications</i> 14:2 113-120 (1982).
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				Applicants: Ekwuribe et al.			
				Filing Date: August 5, 2002 Concurrently heard		Group Art Unit: 1654	
U. S. PATENT DOCUMENTS							
Examiner Initial		Document Number	Date	Name	Class	Subclass	Filing Date If Appropriate
FOREIGN PATENT DOCUMENTS							
		Document Number	Date	Country	Class	Subclass	Translation Yes No
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